

S1 - Microeconomics & Accounting

Sustainability Competency: Issues and concepts of sustainable development at the global level

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Pedagogical Objectives

General

«**Defining the challenges and concepts of sustainable development at the macroeconomic level**»

Specific

1. Understand the **global sustainability challenges**: demography, poverty, inequalities, environmental degradation, debt situation, “9 planetary boundaries”
2. Explain the limitations of Gross Domestic Product (GDP) as a measure of **sustainable development, well-being or quality of life**
3. Know the **development indicators alternative** or additional to GDP (international + CH) and qualify them according to a “weak” or “strong” sustainability approach.
4. Know the principles of the **Green Economy, Wellbeing Economy & Doughnut Economics**

Contents

- Reminder of the global sustainability challenges: demography, poverty, inequalities, environmental degradation, the state of the debt.
- “ 9 planetary boundaries” as a safe operating space for humanity.
- The misuse of gross domestic product (GDP) to measure well-being and quality of life: main limitations
- Other performance or development indicators :
 - HDI and GNH
 - SDGs
 - System of indicators “MONET 2030” (CH)
 - System of indicators “Measuring well-being” (CH)
 - Ecological footprint
- Green Economy, Wellbeing Economy, Doughnut Economics

Exam info - Sustainability Part

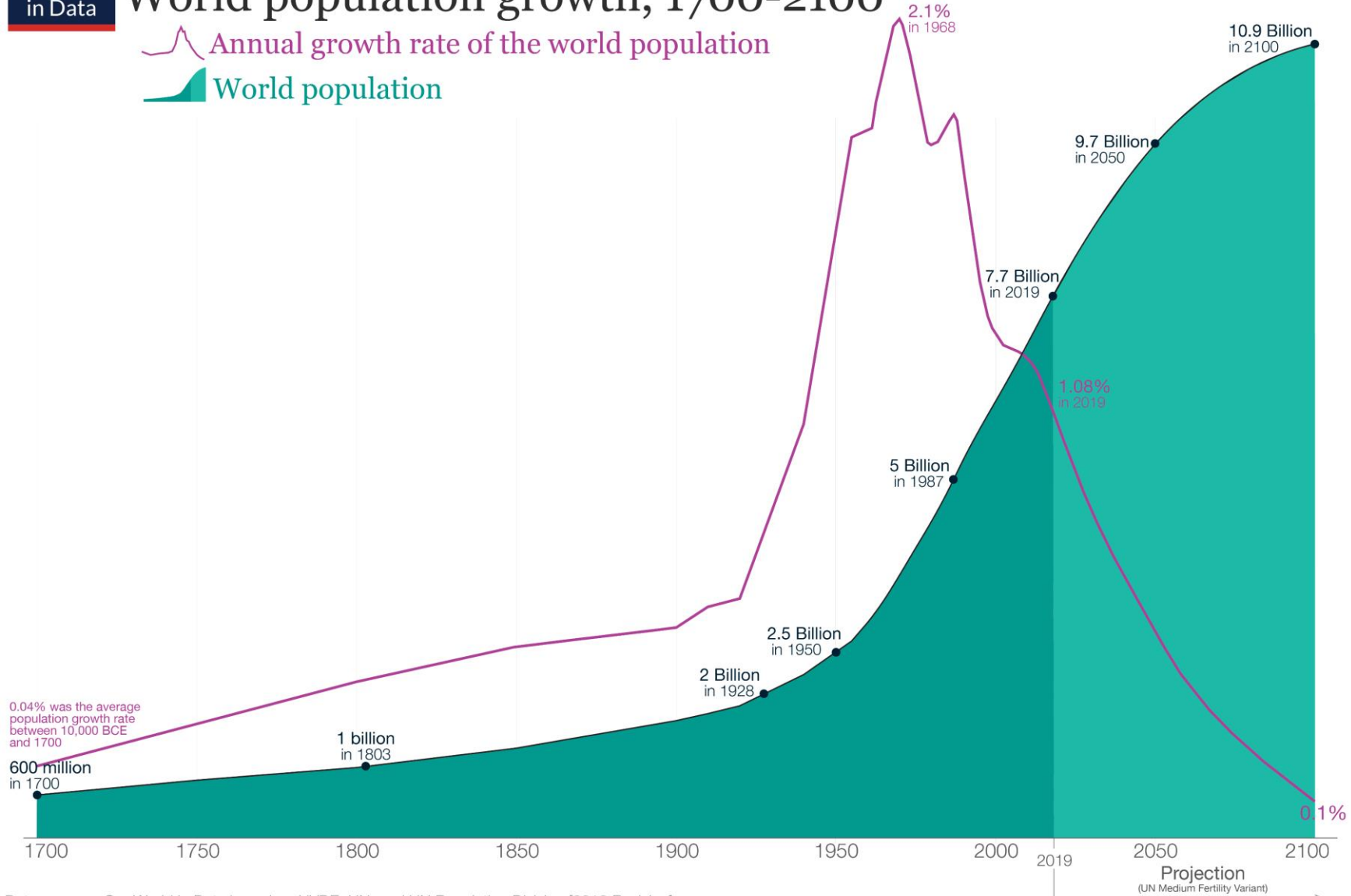
- Date: Friday 12.01.2024
- Time: start at 13:00 in the Aula Bellevue (arrival 15 minutes before)
- Duration: 30 minutes
- The exam aims is to evaluate the achievement of the objectives communicated and covers all content (courses, readings, videos)
- Form: written exam on paper, multiple choices and short development questions
- Authorized means: writing material only

Reminder Global Sustainability Issues/Challenges and deepening

World population growth, 1700-2100

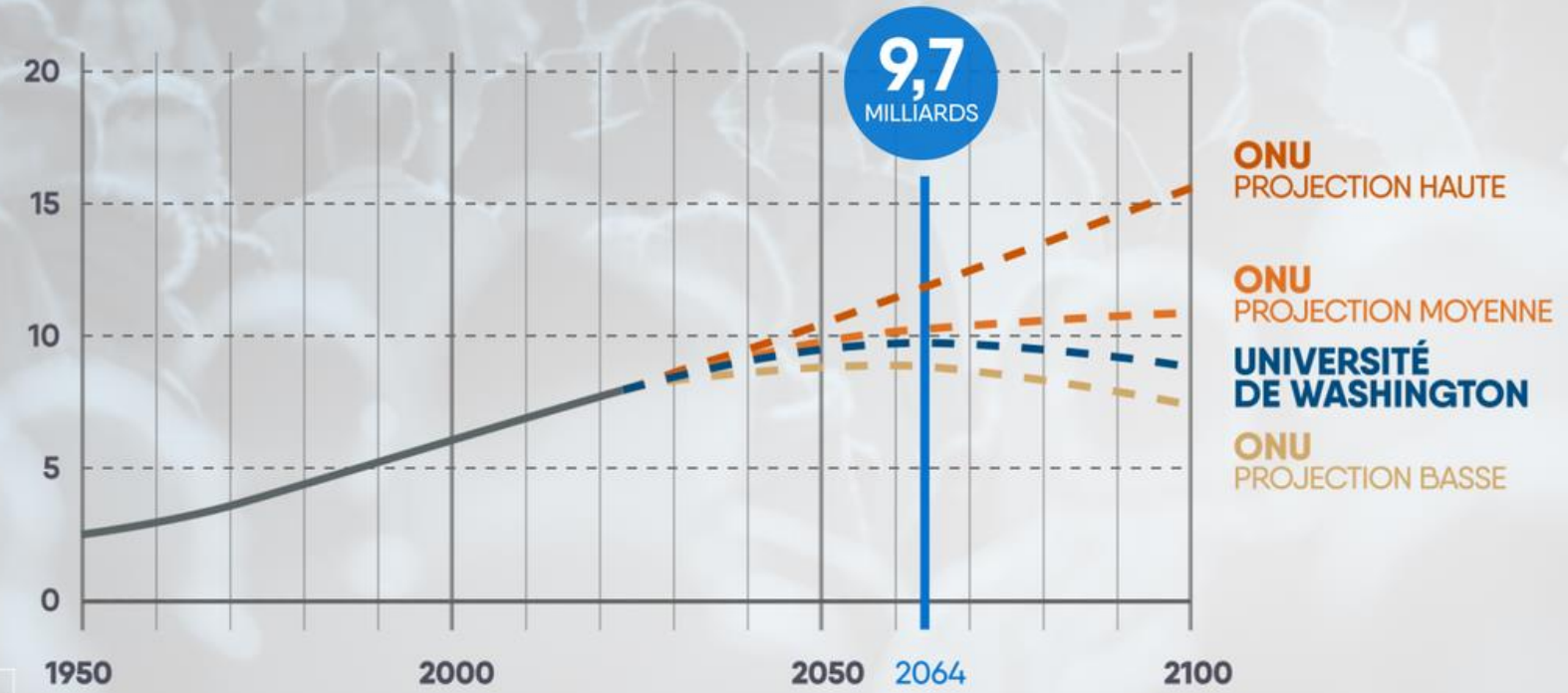
Annual growth rate of the world population

World population

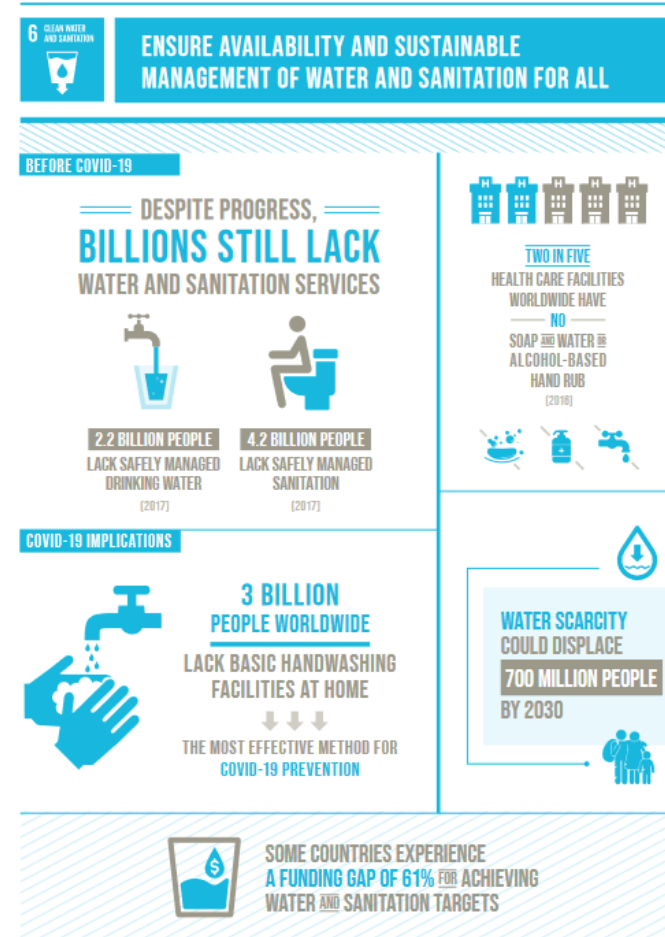
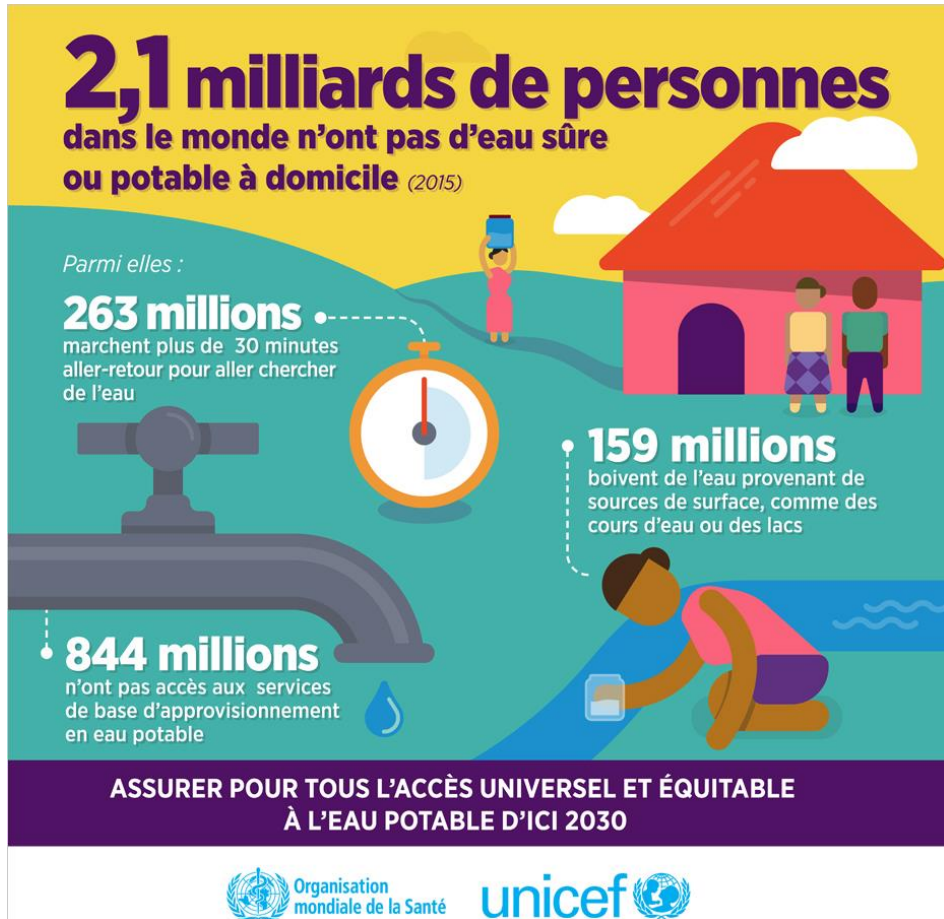


ÉVOLUTION DE LA POPULATION MONDIALE

ESTIMATIONS EN MILLIARDS DE PERSONNES



SOURCE : ONU - UNIVERSITÉ DE WASHINGTON



https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/E_Infographic_06.pdf

Over 820 million people suffering from hunger; new UN report reveals stubborn realities of 'immense' global challenge



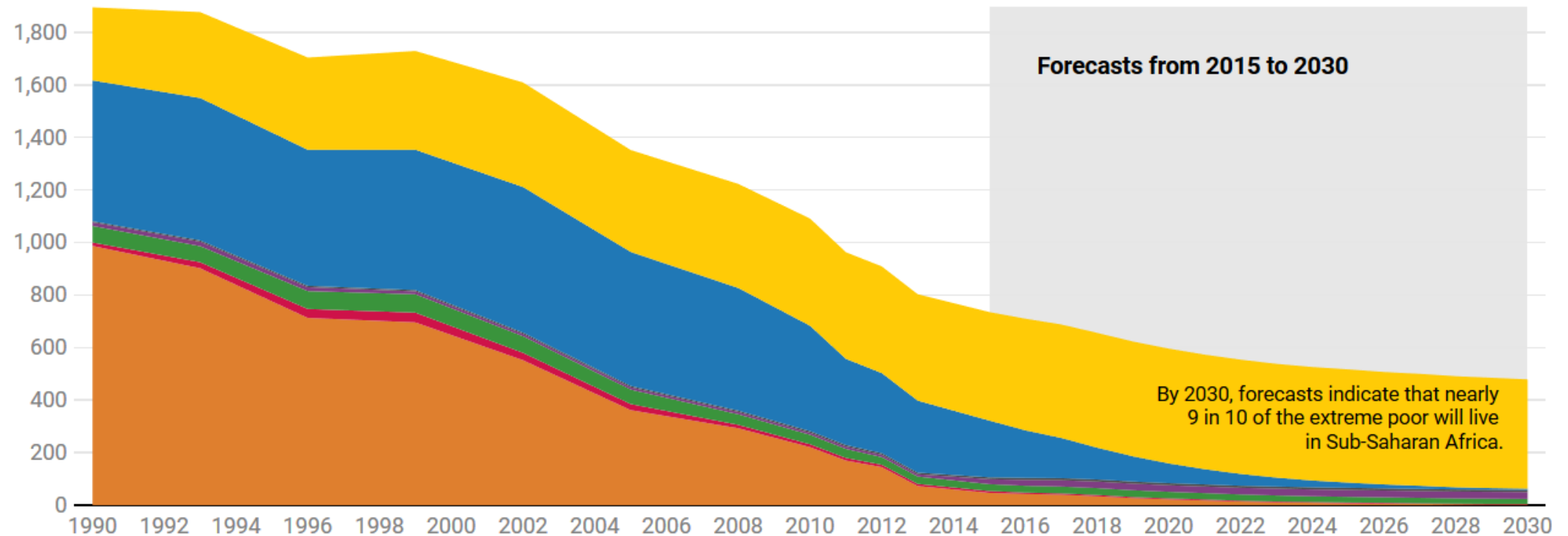
FAO/Manan Vatsyayana | Local school children eat their meals at the Ban Bor Primary School in Xay District, Lao People's Democratic Republic. (14 May 2019)

→ Hunger is mainly the result of **armed conflict**, repeated **economic crises**, **climate change** and the structural failure of a **deeply unequal global agricultural** and food system. (Oxfam)

The number of extremely poor people continues to rise in Sub-Saharan Africa, while falling rapidly in all other regions

People in extreme poverty (millions) -> Less than 1,90 \$ par jour

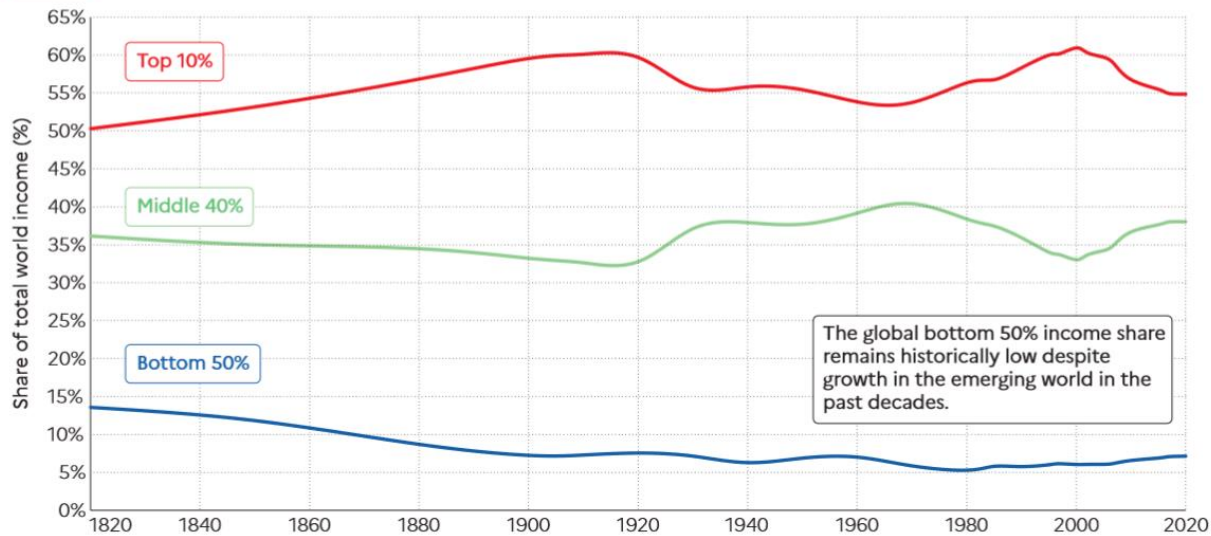
East Asia and Pacific Europe and Central Asia Latin America and the Caribbean Middle East and North Africa Rest of the world
South Asia Sub-Saharan Africa



Source: World Bank PovcalNet and Poverty & Equity Data Portal

<https://blogs.worldbank.org/opendata/number-extremely-poor-people-continues-rise-sub-saharan-africa>

Figure 7 Global income inequality, 1820-2020



Interpretation: The share of global income going to top 10% highest incomes at the world level has fluctuated around 50-60% between 1820 and 2020 (50% in 1820, 60% in 1910, 56% in 1980, 61% in 2000, 55% in 2020), while the share going to the bottom 50% lowest incomes has generally been around or below 10% (14% in 1820, 7% in 1910, 5% in 1980, 6% in 2000, 7% in 2020). Global inequality has always been very large. It rose between 1820 and 1910 and shows little long-run trend between 1910 and 2020. **Sources and series:** see [wir2022.wid.world/methodology](#) and Chancel and Piketty (2021).

Economie Publié le 8 décembre 2021 à 08:48



Le Covid a dopé la fortune des ultrariches, déplore un rapport



Les inégalités mondiales n'ont jamais été aussi grandes / La Matinale / 2 min. / le 8 décembre 2021

La crise liée au Covid-19 a renforcé encore la captation des richesses mondiales par les plus fortunés, constate le World Inequality Report 2022. Ce document, publié mardi, dresse annuellement un état des lieux détaillé des inégalités mondiales.

<https://www.rts.ch/info/economie/12702103-le-covid-a-dope-la-fortune-des-ultrariches-deploire-un-rapport.html>



INEQUALITY KILLS

The unparalleled action needed to combat unprecedented inequality in the wake of COVID-19

SUMMARY



OXFAM

INEQUALITY KILLS



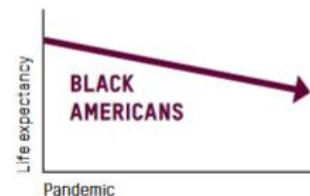
The wealth of the 10 richest men has doubled, while the incomes of 99% of humanity are worse off, because of COVID-19.¹



252 men have more wealth than all 1 billion women and girls in Africa and Latin America and the Caribbean, combined.



3.4 million Black Americans would be alive today if their life expectancy was the same as White people's. Before COVID-19, that alarming number was already 2.1 million.⁴



Inequality contributes to the death of at least one person every four seconds.²

COUNT THE SECONDS



Since 1995, the top 1% have captured nearly 20 times more of global wealth than the bottom 50% of humanity.³



Twenty of the richest billionaires are estimated, on average, to be emitting as much as 8,000 times more carbon than the billion poorest people.⁵



Social Inequalities, As seen from sky



<https://www.archdaily.com/900023/social-inequality-as-seen-from-the-sky?fbclid=IwAR2QqNhGo7YSxSmd3UWYquBTXrPYfVvYHGdtcsNqVikYUXyBeNb9sAYAIc7A>

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Un pactole à 2520 milliards si on taxe les riches, affirment des ONG



PHOTO NICK IWANYSHYN, ARCHIVES REUTERS

Les ONG proposent la mise en place d'une taxe annuelle de 2 % pour les personnes possédant plus de 5 millions de dollars, de 3 % pour les patrimoines au-delà de 50 millions de dollars et de 5 % après un milliard de dollars, qui permettrait de rapporter chaque année 2520 milliards de dollars.

Total and per capita income in **Purchasing Power Parity (PPP)** for a selection of countries, 2015

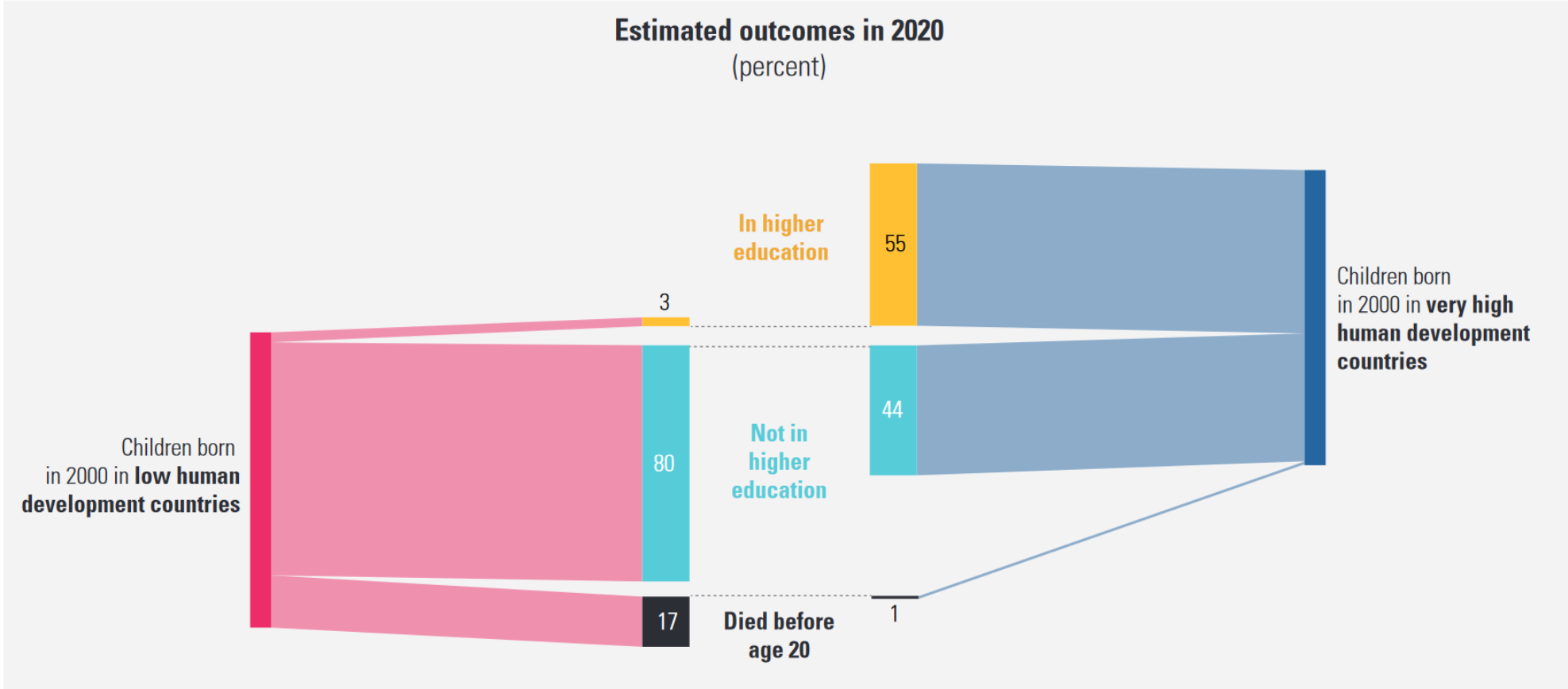
Country	Total Revenue GNI (Mia US\$), PPP	Revenue per inhabitant GNI/hab/year (US\$, PPP)
China	18'538	13'519
United States	17'253	53'741
India	7'449	5'691
Russia	3'498	23'909
France	2'555	38'367
Nigeria	1'001	5'527
Switzerland	483	58'280
Qatar	293	117'896
Ethiopia	152	1'527
Congo	57	750

* Données 2015

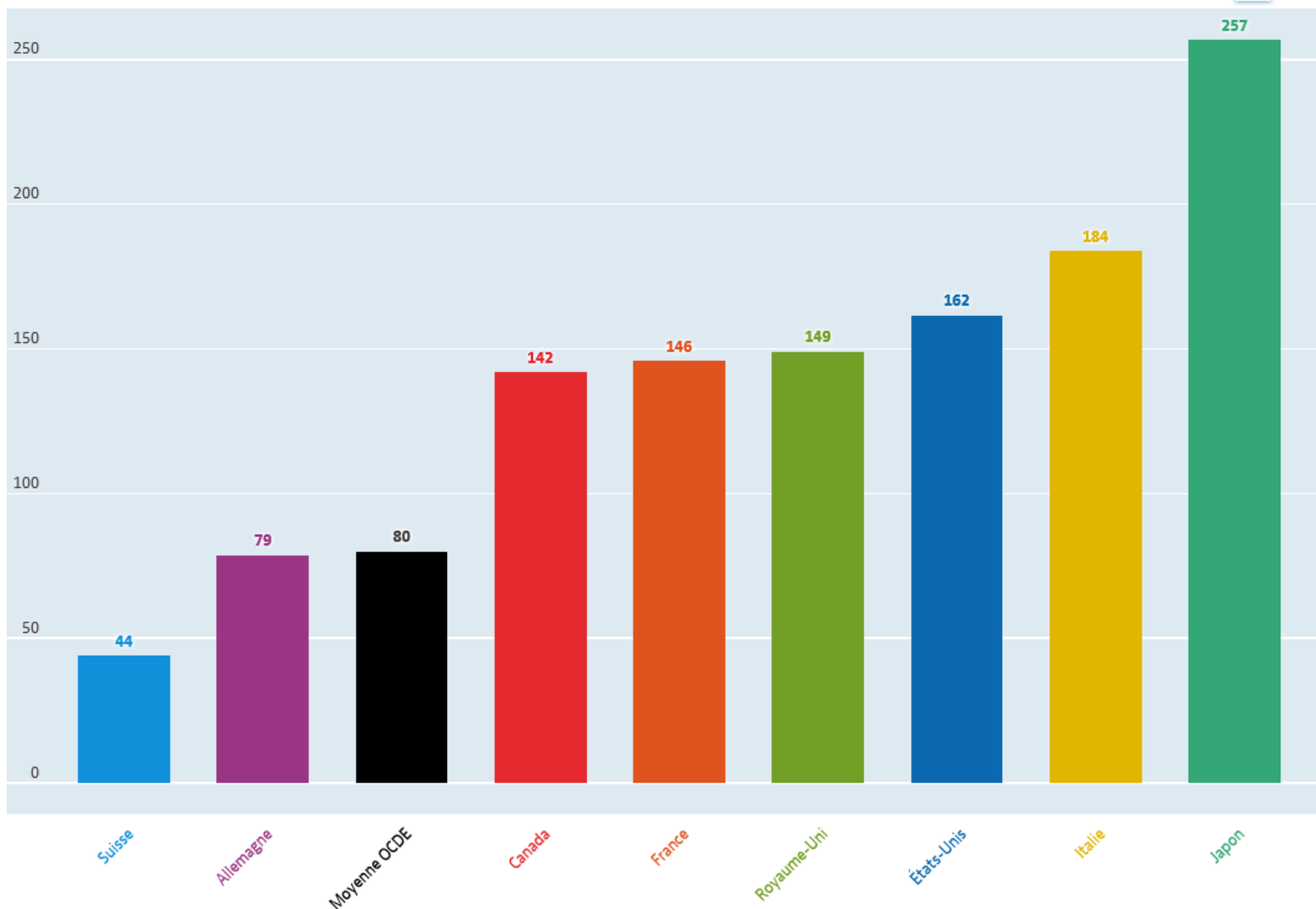
Human Development Inequalities

FIGURE 2

Children born in 2000 in countries with different incomes will have very unequal paths to 2020



Dette des administrations publiques Total, % du PIB, 2020 ou dernières données disponibles



©

Comparer les pays sur data.oecd.org

<https://data.oecd.org/chart/6CSH>

OCDE (2022), Dette des administrations publiques (indicateur). doi: 10.1787/ac7b4839-fr (Consulté le 24 février 2022)

Public Debt (2020)

Country	GDP (Billions)	Public debt (approx)
Switzerland	0,6 B	0,264 B
Canada	1,8 B	2,556 B
Italy	2,5 B	4,6 B
France	3,2 B	4,672 B
United-Kingdom	3,5B	5,215 B
Germany	4,9B	3,871 B
Japan	5,3B	13,621 B
United States	20,9B	33,858 B

<https://data.oecd.org/chart/6CSH>

OCDE (2022), Produit intérieur brut (PIB) (indicateur). doi: 10.1787/dddb17ae-fr (Consulté le 24 février 2022)

Les Etats-Unis, superpuissance de la dette

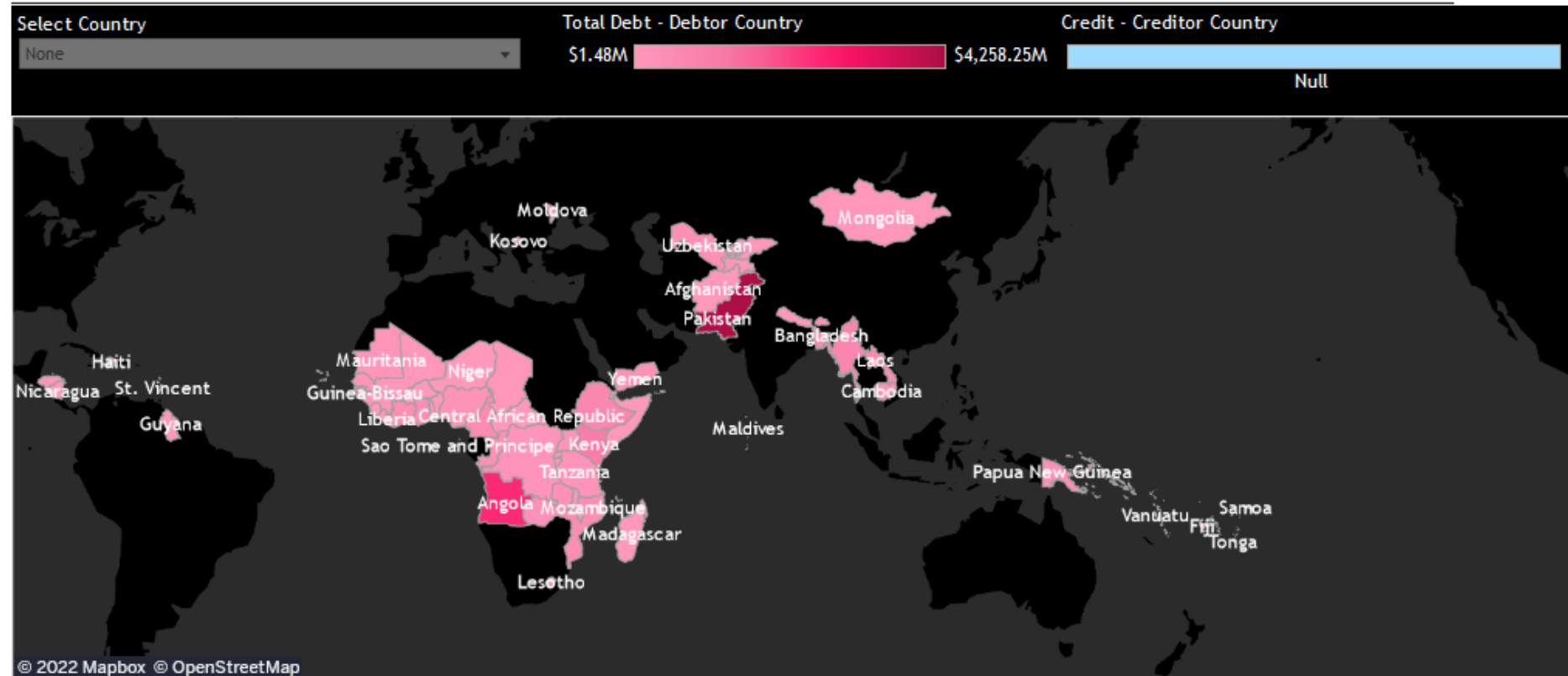
ANALYSE. La dette nationale américaine a dépassé le 31 janvier dernier la somme de 30 000 000 000 000 de dollars. Le gouvernement américain est celui qui utilise le plus les marchés financiers pour boucler ses fins de mois



La dette nationale américaine a dépassé les 30 000 000 000 000 de dollars fin janvier 2022. — © Stacy Revere/Getty Images North America via AFP Photo

The State of External Debt

Total Debt Service to Official Bilateral Creditor Countries in 2020

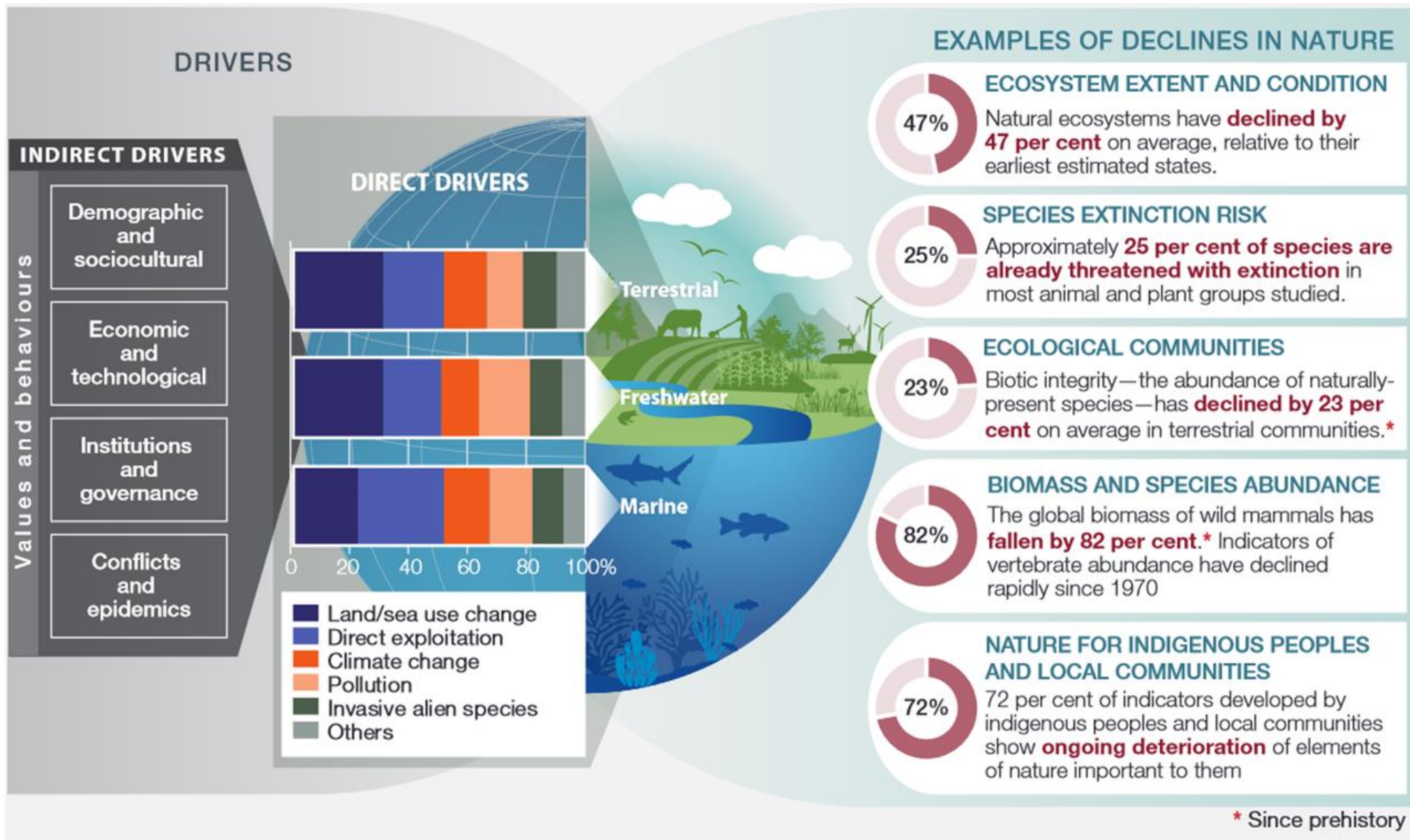


How to read this map: This visualization has two parts. First, a sliding scale of pink countries highlights the ones with the highest external debt. Second, click on a country to see which blue countries own that debt or use a dropdown menu to select the debtor country. Zoom in to see more countries. Click anywhere off the countries or on a blue country to reset the visual.

Article & Sources:

<https://howmuch.net/articles/the-state-of-external-debt>

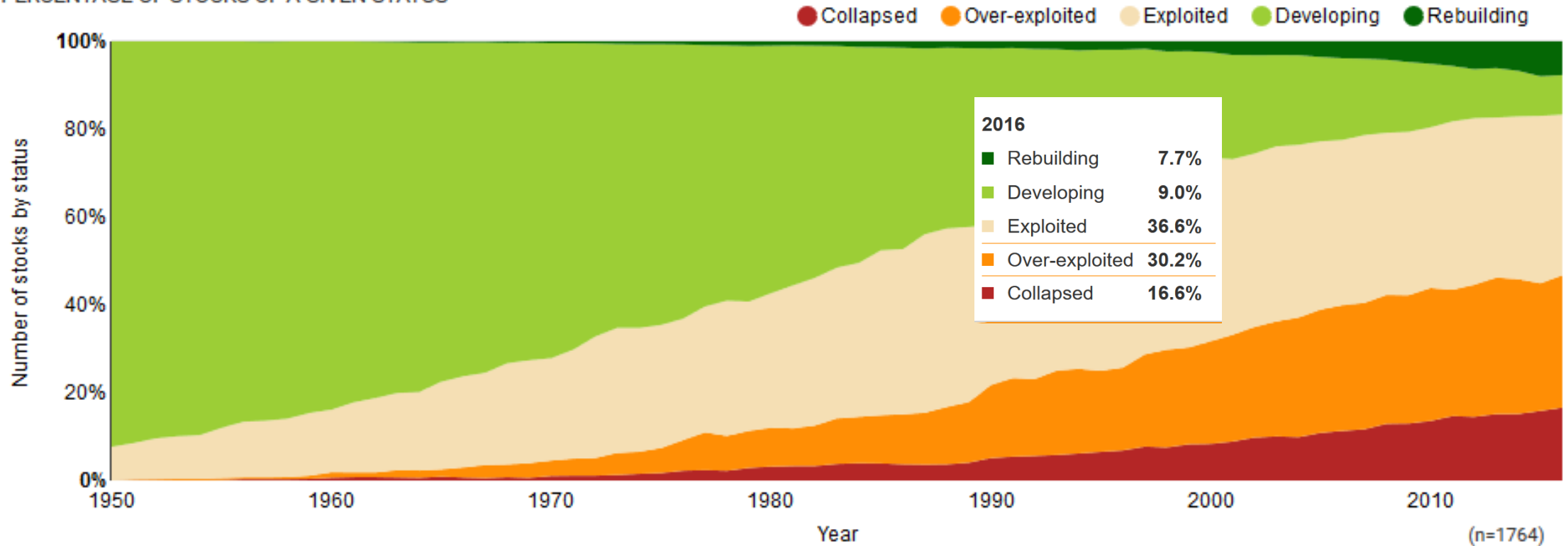
The World Bank - <https://datatopics.worldbank.org/debt/>

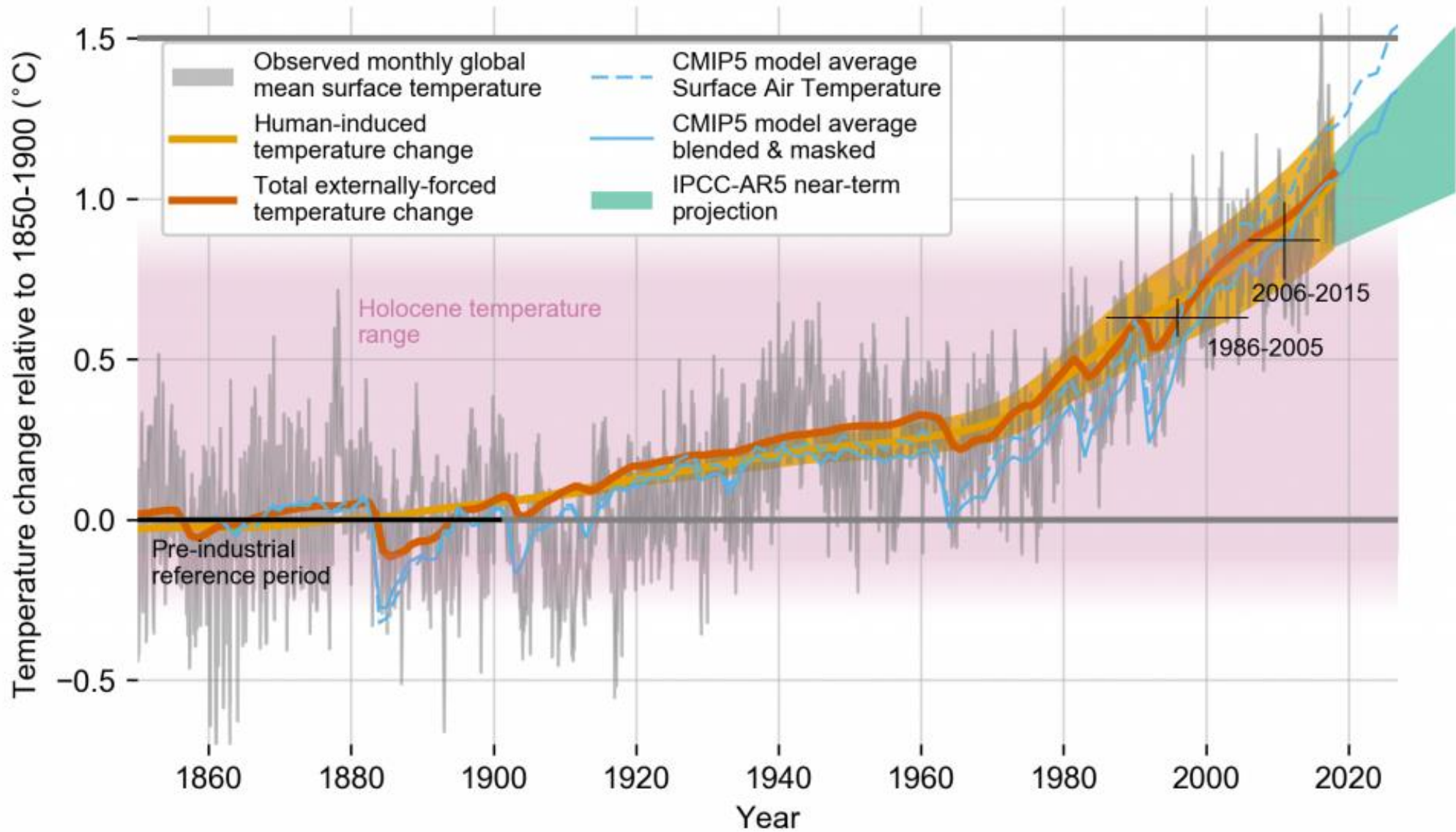


Fish

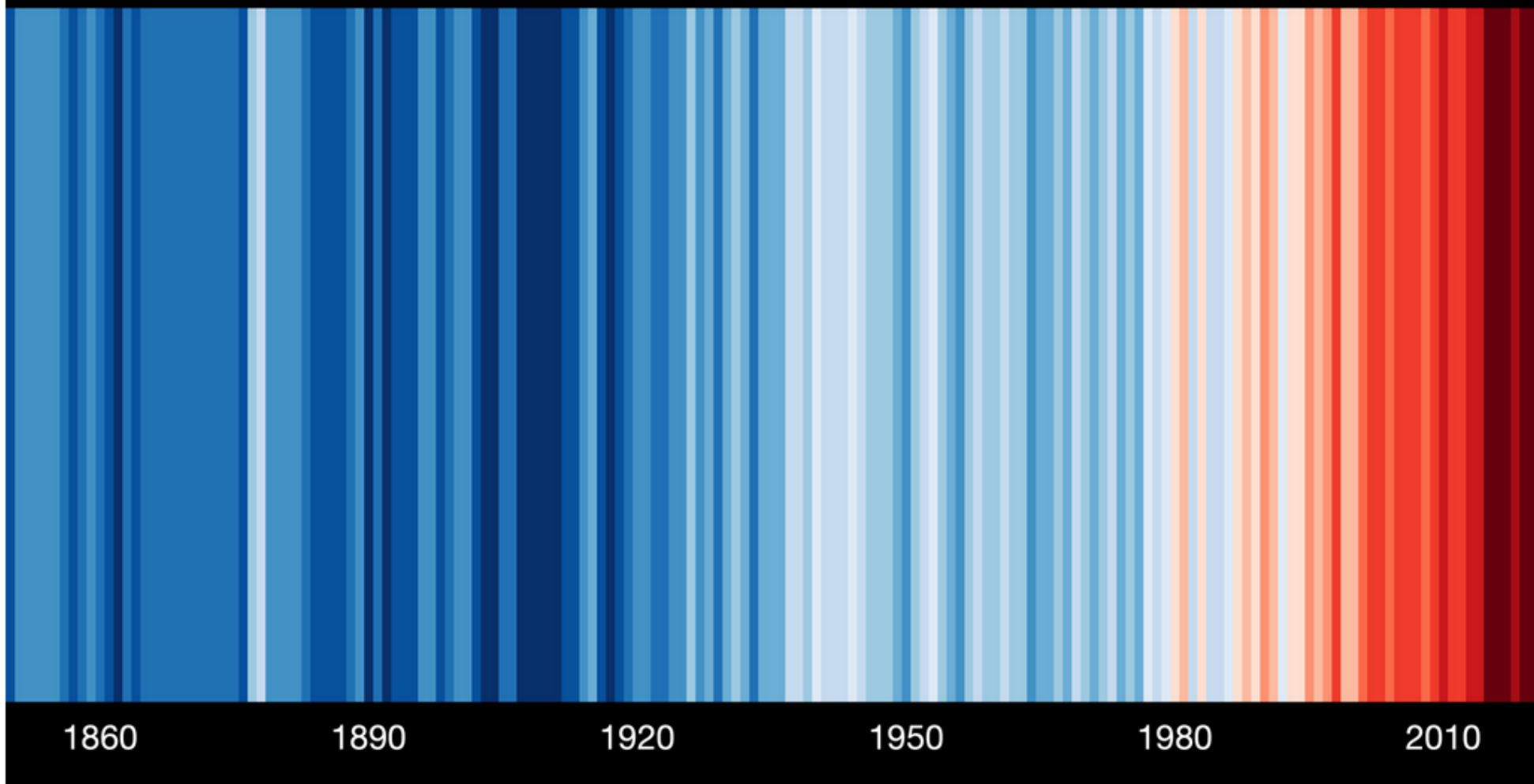
Stock status in the global ocean

PERCENTAGE OF STOCKS OF A GIVEN STATUS





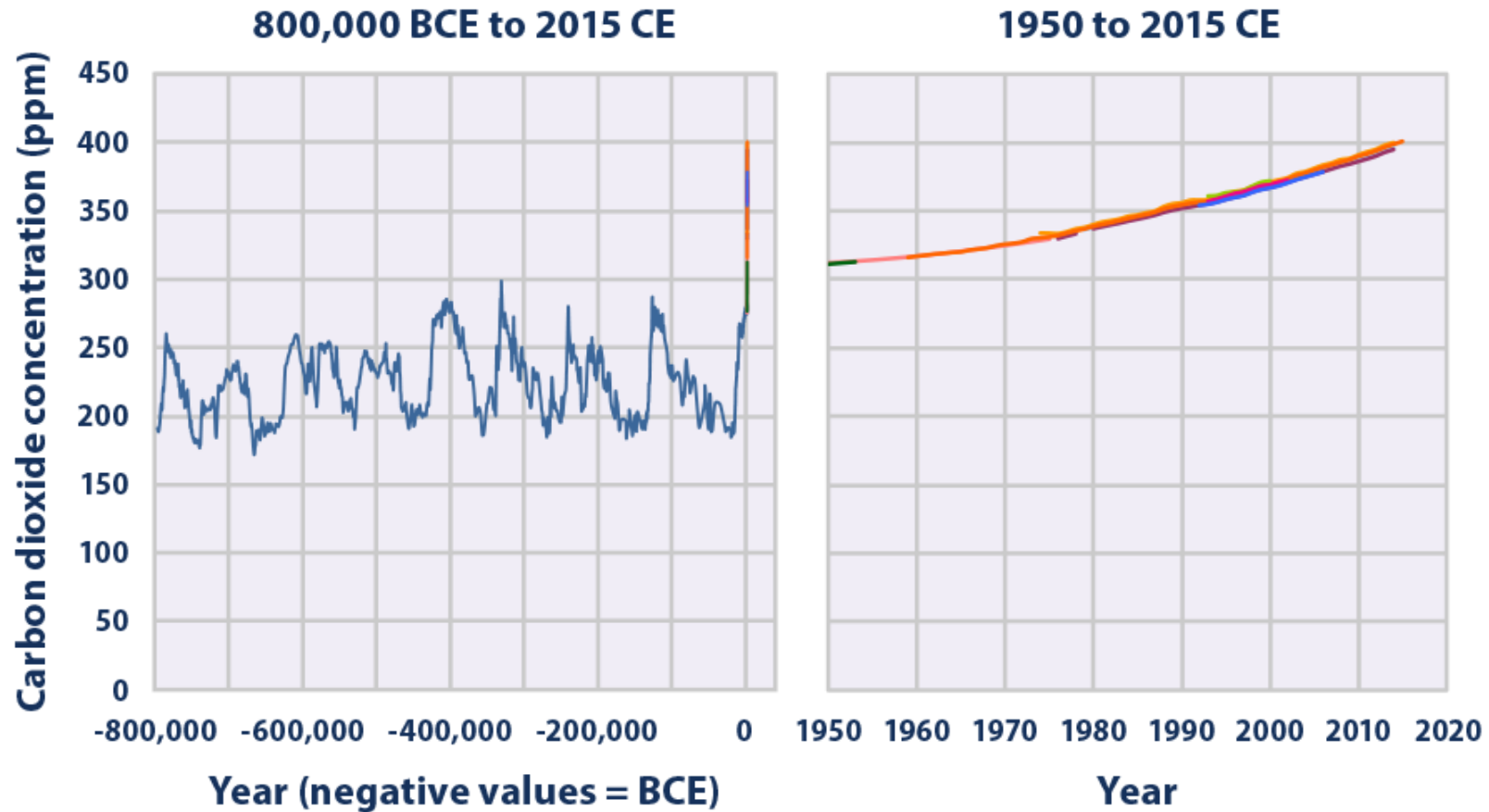
Global temperature change (1850-2021)



L'évolution de la température globale dans le monde depuis 1850. [#ShowYourStripes]

<https://www.rts.ch/info/sciences-tech/environnement/13546097-les-warming-stripes-un-graphique-simple-pour-visualiser-le-rechauffement-climatique.html>

Global Atmospheric Concentrations of Carbon Dioxide Over Time



Data source: Compilation of 10 underlying datasets. See www.epa.gov/climate-indicators for specific information.

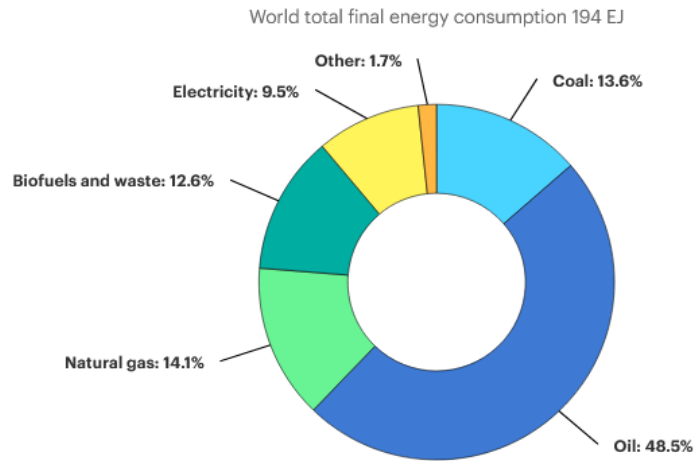
For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

Dependence on fossil energies is real...

Share of world total final consumption by source, 1973

[Open](#)

EJ

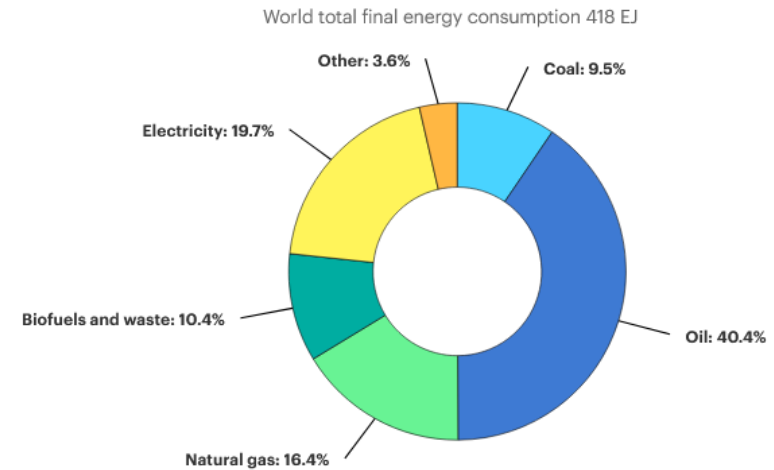


[IEA. Licence: CC BY 4.0](#)

Share of world total final consumption by source, 2019

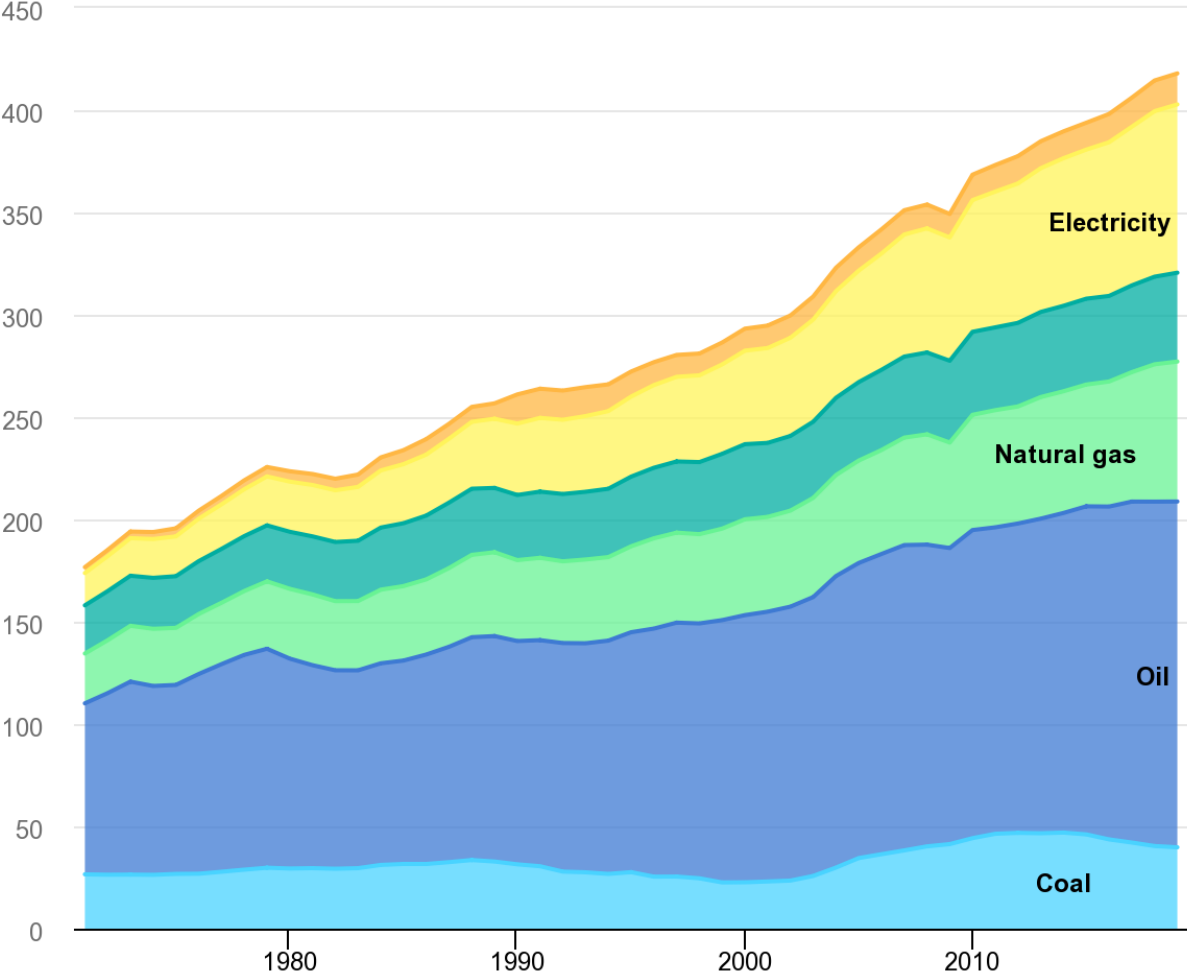
[Open](#)

EJ



[IEA. Licence: CC BY 4.0](#)

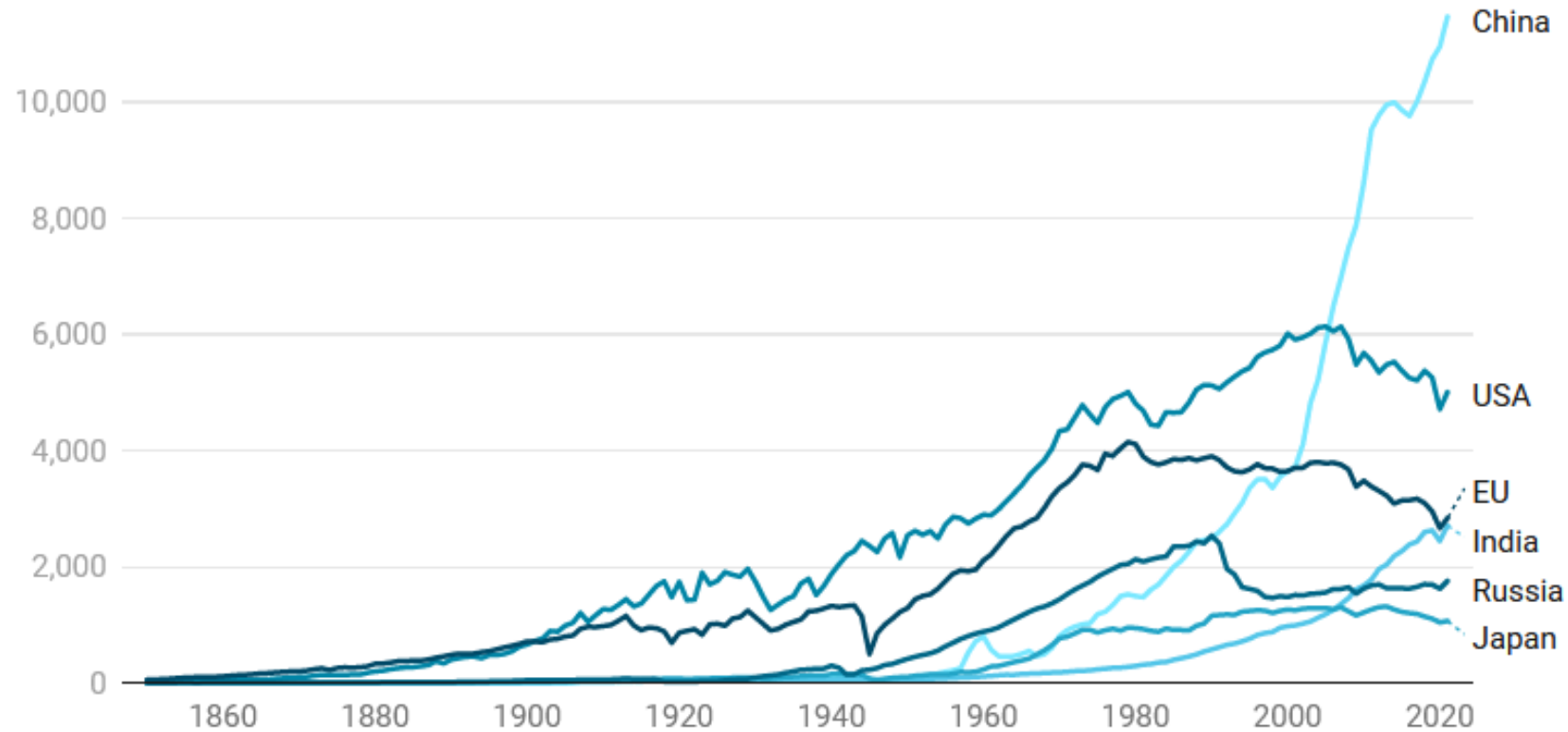
Dependence on fossil energies is real...



<https://www.iea.org/reports/key-world-energy-statistics-2021/final-consumption>
<https://www.iea.org/reports/key-world-energy-statistics-2021/final-consumption>

Top emitters, 1850-2021

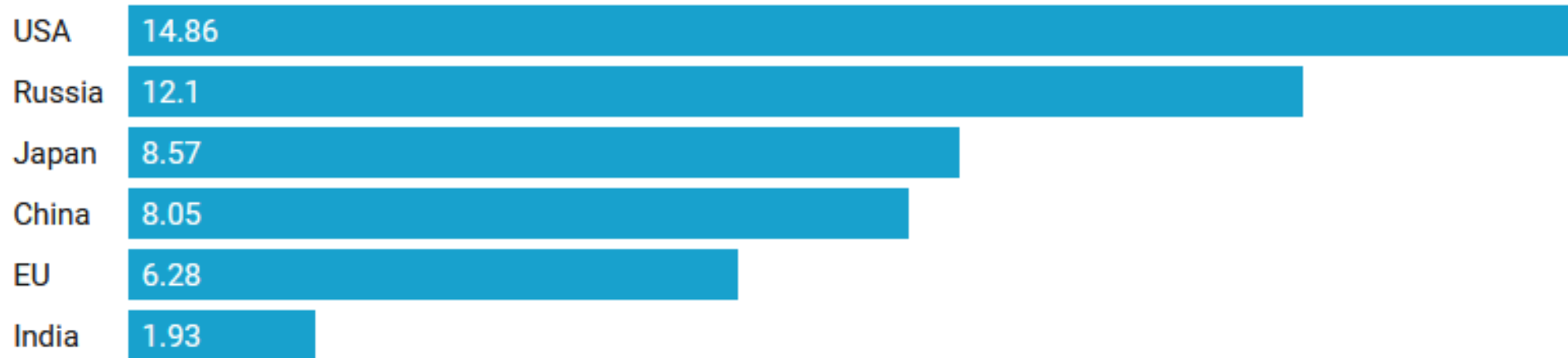
Carbon dioxide emissions from burning fossil fuels, flaring, and cement production, in millions of metric tons.



Source: [Global Carbon Project](#) • [Get the data](#) • Created with [Datawrapper](#)

Per capita emissions

Metric tons of carbon dioxide per person, 2021



Source: [Global Carbon Project](#) • [Get the data](#) • Created with [Datawrapper](#)



30 novembre au 12 décembre 2023 (Dubai)
Avec une présidence controversée ...



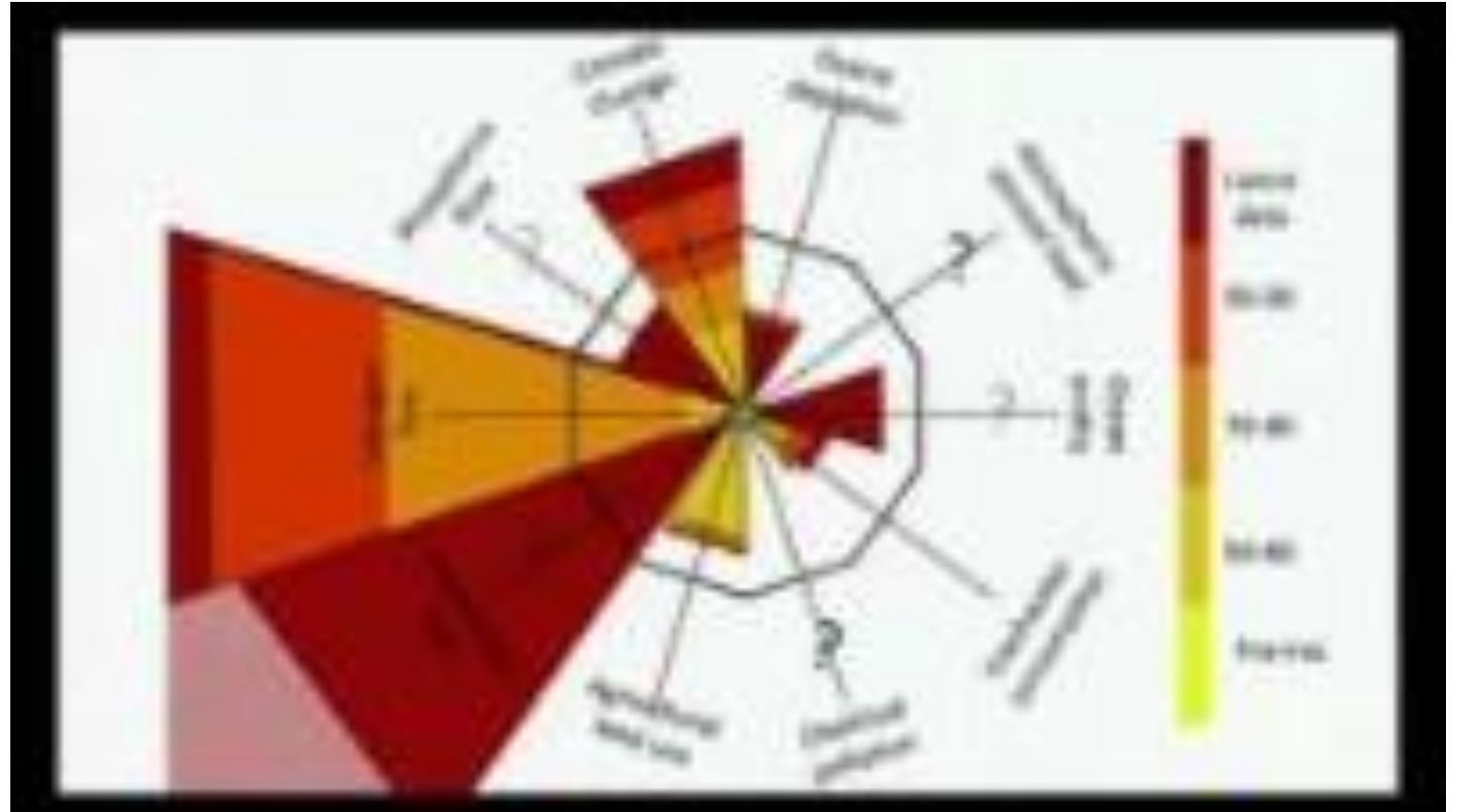
<https://www.ledevoir.com/photos/galleries-photos/les-caricatures-de-godin/1091745>



<https://www.20minutes.fr/planete/cop/4060515-20231104-cop28-dubai-sultan-al-jaber-president-conference-climat>

2009

Development of
the concept of the
**9 planetary
boundaries** as a
secure operating
space for
humanity

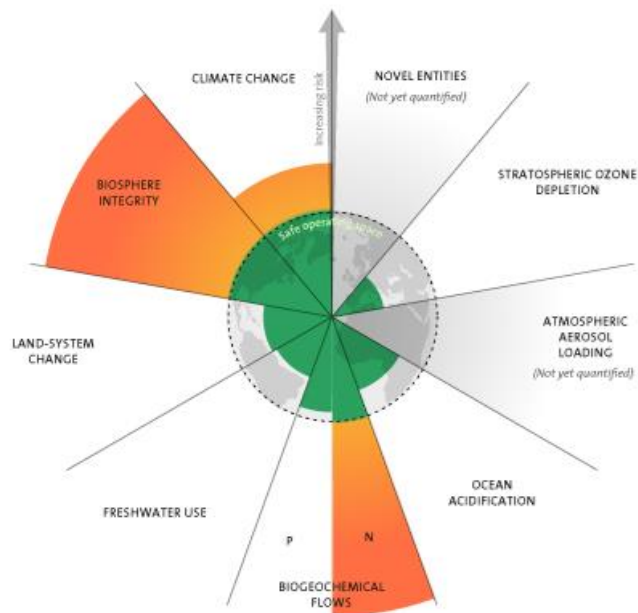


Dr. Johan Rockström presentation, vidéo 18'42''

<https://youtu.be/RgqtrlixYR4>

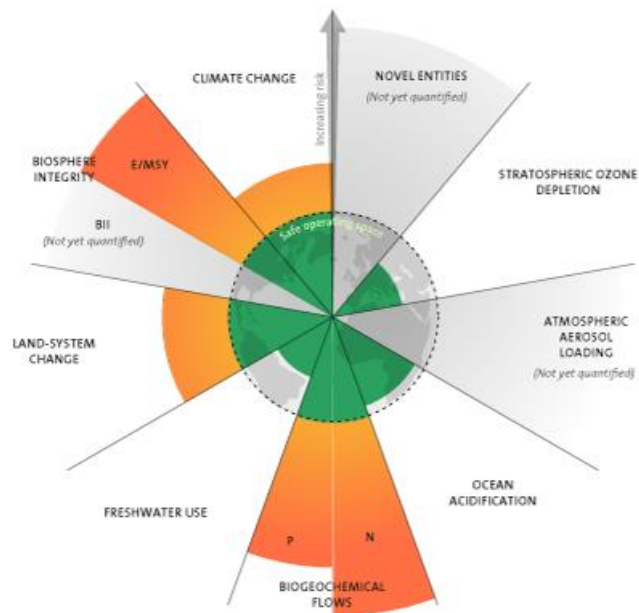
The evolution of boundaries since 2009 ...

2009



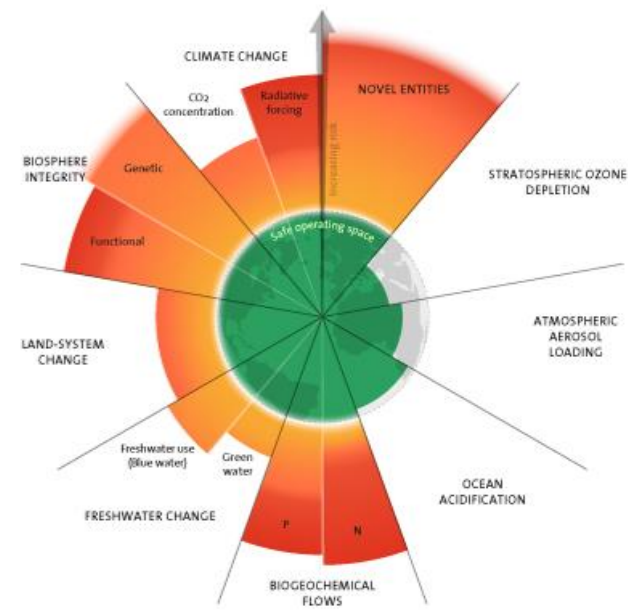
3 boundaries crossed

2015



4 boundaries crossed

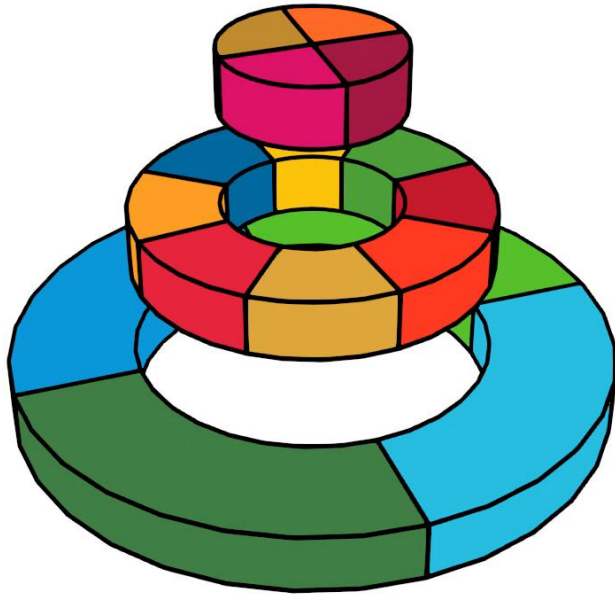
2023



6 boundaries crossed

2016 - From the concept of the 9 boundaries to a new representation of the sustainable development goals illustrating a new development paradigm

The Sustainable Development Goals



This model changes our development paradigm:
the economy is at the service of society so that it evolves in the safe operating space of the planet.

<https://stockholmuniversity.app.box.com/s/8fz5zazt6ng13xss6ksvj42yaf7mo97n>